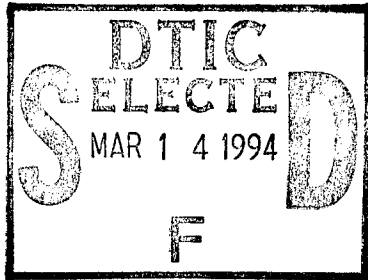


AOARD REPORT

The New Sunshine Program, Japanese Long Term R&D
Program For Solving Energy and Environmental Issues



Mar 15 1993
S. J. Yakura
AOARD

A summary of a new energy and environmental program called the New Sunshine Program is provided. The Minister of International Trade and Industry (MITI) of the Japanese Government established new guidelines in Mar 93 for dealing with energy and environmental issues for the next 27 years. The new guidelines are spelled out in the New Sunshine Program.

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22 March 93

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Subject: Trip Report To Tsukuba, 15 Mar 93

ABSTRACT:

A summary of a new energy and environmental program called the New Sunshine Program is provided. The Minister of International Trade and Industry (MITI) of the Japanese Government established new guidelines in Mar 93 for dealing with energy and environmental issues for the next 27 years. The new guidelines are spelled out in the New Sunshine Program. This program, as part of the overall restructuring of MITI programs, is set up to increase Japanese participation in international energy and environmental programs and take up a leadership role in the international arena via foreign technology development programs.

Purpose: Attend the 12th Science and Technology Symposium on Energy-environmental Issues and Its Resolutions at the Tsukuba Research Center, in Tsukuba City

Comments:

The 12th Science and Technology Symposium was sponsored by the Minister of International Trade and Industry (MITI) as an open forum to discuss energy and environmental issues. This forum served to consolidate two on-going programs, namely Sunshine and Moonlight programs, into one program called the New Sunshine program starting in 1993. The theme of this forum is the continuing progress in simultaneous solutions to energy and environmental problems. The forum lasted for two days where presentations and discussions were divided into opening session and seven technical sessions, covering such topics as electric cars, clean coal technology, hydrogen energy system, global warming, and solar energy. I attended only the first day of the two day forum. The objectives of the new sunshine program are three folds: 1) Increase research in the exploration of new technologies in energy-environmental related fields under the auspice of international organizations; 2) Deal with global energy-environmental issues; and 3) Utilize developed countries' technology to assist underdeveloped countries.

The total budget for the New Sunshine program is 1.55 trillion yen (13.5 billion dollars based the current conversion rate of one dollar = 115 yen) for 27 years, starting in 1993 and lasting until 2020. Under this program it is expected that the annual energy consumption of Japan is reduced to 1/3 of the present value and the CO2 emission is reduced to 1/2 of the present value by the year 2030. The estimated 1993 budget for this program is 539 million yen (469 million dollars) and 503 million yen (325 million dollars) in the 4 years later. The breakdown of the total

budget into three objectives is as follows:

- Category 1) - 500 billion yen (4.35 billion dollars)
- category 2) - 900 billion yen (7.83 billion dollars)
- category 3) - 150 billion yen (1.30 billion dollars)

Considering the up-to-date expenditure of 580 billion yen (5.04 billion dollars) for now defunct Sunshine and Moonlight programs which lasted from 1974 until the beginning of 1993, the New Sunshine program would cost MITI almost three times more in its total expenditure over a 27 year period. However, if we consider inflation and the length of the program, the inflation adjusted annual expenditure for the New Sunshine program is almost of the same order as Sunshine and Moonlight programs.

Benefits to the Air Force:

The electric car and solar energy research are of special interest to the US Air Force. Considering energy-efficient storage and low energy usage systems that may come out of this program, we can use the same technology to operate space vehicles in space. Other research areas such as clean coal, hydrogen energy system, and global warming may not have any direct applications to the Air Force weapon systems at the present time.

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